Disruptive technology displaces current technology using artificial intelligence- A study to assess the influence of DT using AI during recruitment in IT industries

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Abstract - Disruptive technology evolution is an ongoing race among the organizations in the digitalized economy having a better and faster processing technology. It leads into a continuous race in the computerized economy to discover better, quicker and progressively productive advancements which help individuals involving in fast association of work. In the process of recruitment the use of artificial intelligence based computers help the recruiters to perform many tasks with utmost perfection, those tasks which were considered impossible to perform by the computers in early days. Meanwhile, the technology innovation stage bolsters the human resource manager to use automated computers for accomplishing the task at a quicker phase. The top disruptors in the era of technological emergence are mobile internet – inexpensive mobile computing, automation of knowledge– involves subtle judgements, Internet of things – optimization of process and decision making, cloud computing – involves hardware and software used to often provide uninterrupted services and Advance robotics – task automation using artificial intelligence. The present paper represents a quantitative study that was done among human resource managers from diverse companies. The study have applied partial least square method-structural equation modelling (PLS-SEM) approach, which resulted in showing that mediating variable artificial intelligence shows significant mediation among the independent variable and dependent variable.

Index Terms - Disruptive Technology, Artificial intelligence, Recruitment

INTRODUCTION

Information Technology gives huge business potential and linkages among government and the individuals both at the provincial and urban level. Technology plays a pivotal role in the process of recruitment.Whether, it is been in the part of seeker section or in the part of recruiter section. The former role is the seeker who may apply using the basic profile and the later role is the recruiter who may match according to the need specified. In this process the involvement of communication and information technology plays a vital role. The importance's of using automated machines are on the side of recruiter part[1]. As their involvement in using the technology is high. The recruiter needs to understand the process of usingartificial intelligence.

Recruitment activity undergoes a lengthier process because of receiving a huge number of resume for a single job[2]. HR managers need to go through every single resume thoroughly to fill the requirement specified and it may drag the job to do months togethertoo. In this process of recruitment HR managers implement artificial intelligence which operates asequal as human mind. The process of AI technology simplifies the job of HR managers as it not onlyconsumes little time but also gives an appropriate number of aligned resume.

Disruptive technology is no longer away fromindustries or business. It supports them to set up an organisation filled entirely with automated machines in this digitalised economy[3]. Disruptive technology was initially coined by Clayton M.Christensen highlighting that a technology that would displace the current technology[4]. Technology is that simple which utilises new business models for growth [5].

The present study examines the impact of disruptive technology dimensions on recruitment process. The prime motive is to test the impact of dimensions of disruptive technology by artificial intelligence as a mediating factor leading to outcome variable as behavioural intention to use. The study is carried among the HR managers of diverse companies as they

are the individuals having direct involvement in the process of recruitment using new technology.

The study addresses the following research questions:

RQ1: How companies use disruptive technology as a mode to artificial intelligence in recruitment?

RQ2: How companies find the technologies as a user friendly mode to be portable, perceived value and risk-free?

The study is carried to seek solution for the above saidquestions on disruptive technology and artificial intelligence involvement in recruitment activity. These kind of successive technologies intervening the process may gain positivity in programs leading to profitability in performing the tasks. Also there may be few reasons behind using new technologies but when seem to be giving a positive response it createsa change and eventually becomes a standard habit of using it.

LITERATURE REVIEW

I. Disruptive Technology

Disruptive developments don't endeavour to acquire better items to set up clients existing markets. Rather,they present items and administrations that are not on a par with existing items, however which are less complex, increasingly advantageous, and more affordable than existing things. According to investopedia, " Disruptive technology is an innovation that significantly alters the way that consumers, industries, or businesses operate. A disruptive technology sweeps away the systems or habits it replaces because it has attributes that are recognizablysuperior". A potential means to create and accomplish, control and improve the work in progressof human condition and promises to improve in their life span. These technology gives an opportunity to human s with new conditions of machines to save theirlife in case of emergencies and also supports in economic as well social policies[6].

,Organisation checks with its capabilities by setting three factors such as its resources, values and processes. Resources are the people, information, technology and cash. They all are tangible as people isthe resource which can be hired and fired, technology for ease of work, information can be used for future business deals and cash is the mode of transaction. Values are those by which they judge whether a request is alluring or unattractive, regardless of whether a client is pretty much significant than another, and so forth. . Processes is the effectiveness

of a given procedure is prevent mined by how well these undertakings are performed. And characterize abilities in executing certain assignmentssimultaneously characterize hindering factors while executing works[7].

II. Artificial Intelligence

Artificial intelligence (AI) is said to be the intelligent machines falls under the branch of computer science. According to the textbooks define the field as "the study and design of intelligent agents" where an intelligent agent is a system that perceives its environment and takes actions that maximize its chances of success[8]. The adoption of new technologies in the process of recruitment will be essential for throughout activity of recruitment by hiring managers. While in the process of recruitment artificial intelligence helps by supporting hiringmanagers in the process of tracking resume and analyzing multiple data elements that are found in theresume[9].

III. Recruitment by AI

Recruitment based on artificial intelligence is a technology backed by machine intelligence[10]. Thismeans the technology needs to perform actions like automatically fix interview times with candidates, using algorithms to shortlists applicants, schedule interview times and further processes the recruitment activity with ease[11].

The key benefits while using artificial intelligencewhile recruiting:

Figure 1: Key benefits of AI

Source:https://becominghuman.ai/ai-for-recruiting- everything-you-need-to-know-ba30ba860a6c

The technical side of recruitment turned its way towards leading use of technology becoming the backbone of organisations[12]. At the same time the bottom line of technology with recruitment relatively showed a relatively pure substitution for becoming traditional means of recruitment to technology based recruitment [13]. In the path of Artificial Intelligence acquiring recruitment workspace has created an upcoming change in HRM practices. The traditional practice of hiring personnel involves job analysis and job description which further being shared on various platforms such as social media, newspapers, online boards, or career portals to attract job seekers[14]. Thus leading to technology involvement of machines intervening the process leading speeding up of process[15].

RESEARCH MODEL AND HYPOTHESIS

I.   *Resesarch design:*

The research design is "the blueprint for fulfilling objectives and answering questions" [16]. A descriptive research method was adopted for this research study. A descriptive study is defined as "the research is concerned with finding out who, what, where, when, or how much" [16].

II.   *Sampling Design and data collection:*

This research uses non-probability sampling method. Nonprobability is a subjective approach wherein the samples are drawn from unknown populations . According to Sekaran (2003) "under non-probability sampling technique, the elements in the population do not have any probabilities attached to there being chosen as sample subjects and helps research to obtain information in a quick and inexpensive way".

III.   *Sample size determination:*

According to Cohen (1988) and Westland (2010) framed a formula for the minimum sample size to carry out SEM analysis. The minimum sample size obtained was 94. A self-administered Likert scale questionnaire was prepared and distributed among the respondents.

IV.   *Research Model:*

The model has incorporated the study done on computers replacing human minds by Fred Davis 1989. Where by Davis clearly explains about the intention to use of new technology brings lots positivity in work space for human minds. In the same way the present study have taken the base model as technology acceptance model and framed a new model. The base model is
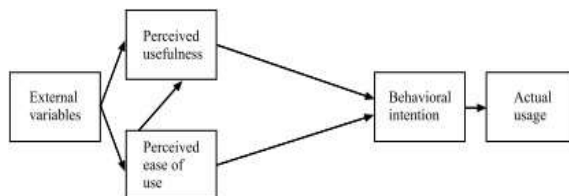

Figure 2: TAM Model

Source: Technology acceptance model, Davis, Fred D. Venkatesh, Viswanath[17]

The following model is adapted for actual TAM model in which independent variable are portability, perceived value and risk free, moderating variable is artificial intelligence and outcome variable is intention to use technology in recruitment.
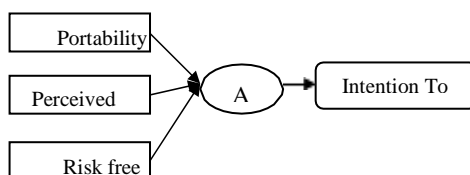

Figure 3: Prescribed model for the study

Data Analysis and Interpretation: Data is analysed by using Statistical Package for Social Science (SPSS) 22.0, Smart PLS. To test out reliability and validity Smart PLS is used.

The data s are further analysed and hypothesis after testing resulted in

Hypothesis1: Portability is essential to communicate through AI while intention to use technology on recruitment activity. In the study artificial intelligence is an ideal intelligent machine it determined to be a peculiar agent working behind human minds to uncover the difficult task into success one. Here the variable portable is studied to check the level of ease in understanding the way machines work. And also human minds one learn the technology it becomes easier for them to implement and work on new tasks assigned.

Hypothesis2: Perceived value becomes absolutely necessary to use AI for good results ending while intention to use technology on recruitment activity. Once learning happens during using artificial intelligence means of work, the human tasks may

move for further level and reach new goals as per time required.

Hypothesis3: Risk free states the use of AI while recruitment protects the users i.e., intention to use. The risk factor is an another term in case of trying implementing novel technologies. Current era is entirely moving on with artificial intelligence. There by when a machines tries to work equally as human mind it is easier for them to adapt and use in their day to day activity. So in the study once understood the way it works the intention to use technology for recruitment increases.

Artificial Intelligence	AI1 AI2 AI3 AI4	0.791 0.761 0.842 0.841	0.8834	0.6548	0.8236
Intention To Use	ITU1 ITU2 ITU3 ITU4	0.784 0.806 0.852 0.859	0.8953	0.6815	0.8448

Source: Computed primary data

Indices: CR=Composite Reliability, AVE=Average Variance Extracted

TEST OF DISCRIMINANT VALIDITY:

Hypothesis4: Artificial Intelligence mediates the relationship between independent variable and outcome variable. The study tries to examine the artificial intelligence tries to be mediator between the independent variable and the dependent variable.

TEST OF CONVERGENT VALIDITY:

Convergent validity is defined as "the extent to which a measure correlates positively with alternative measures of the same construct". Average Variance Extracted (AVE) is the most commonly adopted measures for convergent validity. The AVE is defined as "the grand mean value of the squared loadings- of the indicators associated with the construct (i.e., the sum of the squared loadings divided by the number of indicators)". The AVE values should be more than 0.50 to have convergent validity[18]. All the constructs having AVE values above 0.5 which satisfies the thumb rule of Hair et al (2013, p. 103).

The assessment of Convergent Validity

Variables	Items	Individual item Reliablity	CR	AVE	Cronbach's Alpha
Portability	PT1	0.892	0.9472	0.6928	0.9359
	PT2	0.854			
	PT3	0.878			
	PT4	0.853			
	PT5	0.790			
	PT6	0.688			
	PT7	0.787			
	PT8	0.894			
Perceived Value	PV1	0.834	0.8851	0.66	0.8263
	PV2	0.886			
	PV3	0.825			
	PV4	0.793			
Risk Free	RF1	0.890	0.9279	0.7628	0.8963
	RF2	0.870			
	RF3	0.854			
	RF4	0.879			

Discriminant Validity is defined as "the extent to which a construct is truly distinct from other constructs by empirical standards" [19]. It is important for every construct to be distinct from each other because to have good discriminant validity. There are two methods of discriminate validity test 1. CrossLoadings examination and 2. FornellLarcker Criterion(Hair et al., 2013, p. 105).

USING FORNELL-LACKER CRITERIA

	PTA	PV	RF	AI	ITU
PTA	0.832				
PV	0.403	0.869			
RF	0.454	0.688	0.758		
AI	0.696	0.447	0.464	0.820	
ITU	0.655	0.418	0.456	0.659	0.820

Source: Computed primary data

BOOTSTRAPPED CRITICAL RATIO TEST:

The significance levels of the path were evaluated using bootstrapping techniques with 5000 bootstrap samples and no sign change option was used as per thumb rule of Hair et al (2013)

Path	Hyp	β Co-efficient	T-Stat	Sig.	Hypothesis
PT->AI	H1	0.1107	2.499**	Sig	Supported
PV->AI	H2	0.2983	5.7785***	Sig	Supported
RF->AI	H3	0.5574	9.859***	Sig	Supported
AI->ITU	H4	0.4867	11.3859***	Sig	Supported

Source: Computed primary data

FINDINGS AND CONCLUSION:

In the present study after testing the constructs by applying PLS-SEM it found that the test of reliability performed among the constructs such as portability, perceived value, risk free, artificial intelligence and intention to use justifies the thumb rule of research[20]. All the constructs cronbach's alpha value fulfills the thumb rule. Even the hypothesis framed and tested shows the significant effect amongthe dependent and the independent variable.

FUTURE DIRECTIONS FOR RESEARCHERS:

The present study highlights only the human resource department. The study can also be done among the various other departments to test the use of technology among the human resources. Even further researchers can implement other software tools to test the constructs and its effect among the variable. And also researchers can carry forward with the same constructs with other respondents and seek a new results in future.

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